
Exercise G1: Our Home Galaxy, the Milky Way

Student name: _____ Class: _____ Date: _____

Check the box with the correct answer.

Question 1: What is the general shape of the Milky Way galaxy?

- a. a spiral shape.
- b. a flattened disk in a spiral shape with a bulge in the center.
- c. a round bulge.
- d. an irregular shape.

Question 2: Which statement best describes the position of the Sun and Solar System within the Milky Way?

- a. The Sun and Solar System are located at the center of the galaxy.
- b. The Sun and Solar System are located on the outer edge of the galaxy.
- c. The Sun and Solar System are not part of the Milky Way.
- d. The Sun and Solar System are located about two thirds of the way from the center to the edge of the galaxy.

Question 3: The Sun moves with a velocity of about 220km/sec in its orbit about the galactic center. What is the approximate time required for the Sun (and the entire Solar System) to complete one orbit of the galactic center?

- a. 115 million years
- b. 230 million years
- c. 10 billion years
- d. 460 million years

Question 4: Carefully examine the shape of the spiral arms. In which direction do you think the galaxy is rotating?

- a. The galaxy is rotating in a counter-clockwise direction
- b. The galaxy is rotating in a clockwise direction
- c. The galaxy is expanding outwards
- d. The galaxy is collapsing inwards, towards the black hole at its center

Question 5: The Solar System is embedded within the galaxy. Why does the Milky Way appear as a narrow band of light instead of appearing as faint but evenly distributed light across the entire sky?

- a. The galaxy is flattened and we view it edge-on from its interior.
- b. The intense gravitational field from the central supermassive black hole has distorted our view of the galaxy.
- c. The central region of the galaxy is made up mostly of bright, young stars while the outer regions contain mostly older and much fainter stars.
- d. All of the Milky Way except the central plane is obscured from view by interstellar dust

Question 6: The Milky Way appears to us as a patchy and irregular band across the sky. What accounts for this?

- a. Stars that make up the Milky Way are unevenly distributed within the galactic disk.
- b. Irregular clouds of interstellar dust block out the central regions of the galaxy from our view.
- c. The intense gravitational field from the supermassive black hole at the galactic center has deformed the shape of space; this distorts our view of the galaxy.
- d. The separate sections that we see in the Milky Way are simply the individual spiral arms of the galaxy.

Question 7: Which statement best describes the geometry of the solar system's location within the Milky Way galaxy?

- a. The plane of the solar system is coincident with the plane of the galaxy.
- b. The plane of the solar system is perpendicular to that of the Milky Way.
- c. The plane of the solar system is inclined at a small angle to the plane of the galaxy.
- d. The angle between the plane of the solar system and the galactic plane is large but less than a right angle.

Question 8: The current Main Window view shows a gamma ray view of our galaxy. Locate our galaxy's "hot spot" in order to determine the location of the supermassive black hole at the center of the Milky Way. In which constellation is the galactic core of the Milky Way located?

- a. Ara
- b. Norma
- c. Sagittarius
- d. Corona Australis